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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,568	09/28/2005	Haruyuki Sato	0425-1171PUS1	4200

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EXAMINER

CORDRAY, DENNIS R

ART UNIT PAPER NUMBER

1731

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/521,568

Applicant(s)

SATO, HARUYUKI

Examiner

Dennis Cordray

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-10, 12-14, 16-18 and 20-24 is/are rejected.
- 7) ☒ Claim(s) 11, 15 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's amendments, filed 9/18/2006, have overcome the rejection of claims 1-14 under 35 U.S.C. 102(b). Accordingly, the rejection has been withdrawn.

Applicant's arguments with respect to the rejections of claims 1-14 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, a new ground of rejection is made as detailed below.

Claim Objections

Claims 3 and 24 are objected to because of the following informalities: Claim 3 recites in two locations that the nonionic monomer having a solubility parameter of 20.5 (MPa)^{1/2} or less is present in copolymer (A) in an amount from 5 to 84% by weight, and the anionic and cationic monomers are present in a total amount from 1 to 80% by weight. Appropriate correction is required.

In Claim 24, the prefix "(meta)", which is used several times in the claim, should be changed to "(meth)".

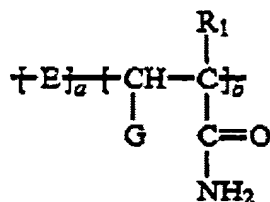
Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

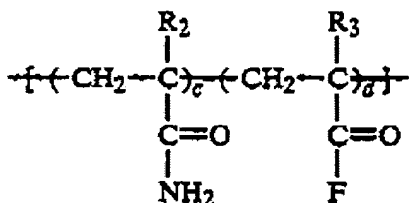
Claims 1-3, 6-10, 12-14, 16-18 and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al (5374336) in view of Anderson et al (Re. 28474).

Art Unit: 1731

Lin et al discloses a water soluble graft copolymer useful as a retention and drainage aid in papermaking processes. The copolymer has the repeating structure:



wherein E is the repeat unit obtained after polymerization of an α,β ethylenically unsaturated compound, the molar percentage of a:b is from about 95:5 to 5:95, with the proviso that the sum of a and b equals 100%; G comprises the structure:



wherein d is a cationic monomer, R_1 , R_2 and R_3 are the same or different and are hydrogen or a lower alkyl group having C_1 to C_3 , F is the salt of an ammonium cation and the molar percentage of c:d is from 95:5 to 5:95 with the proviso that the sum of c and d equals 100% (Abs). Preferable repeat units E are alkyl (C_1 - C_8) ester or hydroxylated alkyl (C_1 - C_8) ester of a carboxylic acid (col 2, lines 39-63). Compounds encompassed by E include ester derivatives of (meth)acrylic acid and maleic acid, which are recited as particularly preferred nonionic monomers on p 14, last paragraph of the instant Specification. The range encompassed by the subscripts a, b, c and d significantly overlays the claimed monomer composition. Branching agents can be included such as N,N'-methylenebis(meth)acrylamide and polyethyleneglycol

Art Unit: 1731

di(meth)acrylate, which are recited as crosslinkable monomers on p 16, last paragraph of the Specification. The molecular weight of the copolymers ranges from 10,000 to 30,000,000 (col 4, line 67 to col 5, line 2).

Lin et al discloses that the copolymer is obtained in emulsion form by using inverting surfactants such as those described by Anderson et al (Re 28474) and is added to the pulp furnish prior to the paper forming stage (col 4, lines 43-48; col 5, lines 3-7). Lin et al discloses the process of making paper and paper made using the polymers (col 5, line 50 to col 6, line 12).

Lin et al does not disclose the specific surfactants used or the amount of surfactant used.

Anderson et al discloses inverting surfactants used for rapidly dissolving water soluble vinyl addition polymers in water (Abs). The emulsions can be used in papermaking processes (col 1, lines 12-18). The surfactants, which can be cationic or nonionic, are hydrophilic and water soluble (col 5, lines 10-13; and 29-30). The surfactants are present in an amount of 0.01 to 50% based on the polymer, which significantly overlays the claimed polymer:surfactant ratio (col 5, lines 2-6). Suitable surfactants include condensation products of higher fatty acid amides and higher fatty alcohols with ethylene oxide and ethylene oxide adducts of polyhydric alcohols, which overlay the surfactants recited on p 22 of the Specification. Examples are given of ethylene oxide adducts having greater than five ethylene oxide units (col 5, line 52 to col 6, line 44).

The art of Lin et al, Anderson et al and the instant invention is analogous as pertaining to copolymers and surfactant containing compositions useful in papermaking processes. It would have been obvious to one of ordinary skill in the art to use the claimed surfactants in the claimed polymer:surfactant ratio in the process and paper of Lin et al in view of Anderson et al to facilitate forming the polymer emulsions.

It would have been obvious that the copolymers and surfactants disclosed by Lin et al in view of Anderson et al, when added to the suspension, can provide the claimed improvement in bulky value, opacity, brightness or ratio in burst index because, where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent. Making a paper sheet at the claimed speed using a high speed papermaking process would have been obvious as typical process conditions (for evidence, see Haylock (Paper, Its making merchanting and usage, 3rd ed, The national Association of Paper Merchants, London, 1974, p 72, as recited in the previous Office Action). It would further have been obvious to obtain the claimed properties of the surfactant since the surfactants disclosed by Anderson et al overlay those of the instant invention.

Allowable Subject Matter

Claims 15 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The data provided in the examples in the instant Specification appear to show that specific polymers and surfactants are required to achieve the improved ratio in burst index of -502 or more, which polymers and surfactants would not have been obvious over the disclosure of Lin et al. Since the significant amount of branching differentiates the disclosed polymer from those conventionally used in the art, it would not have been obvious to add a second water soluble polymer to the process of Lin et al.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1731

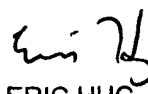
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


DRC


ERIC HUG
PRIMARY EXAMINER